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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/729,636	12/04/2000	Karl Emerson Mautz	SC0192WD	3043

7590 01/29/2004

Jim Clingan  
Motorola, Inc.  
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EXAMINER
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CABRERA, ZOILA E

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/729,636

Applicant(s)

MAUTZ ET AL.

Examiner

Zoila E. Cabrera

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 8-19 are rejected under 35 U.S.C. 102(b) as being anticipated by **Garric et al. (US 5,411,358)**.

**Garric** discloses, regarding claims 1 and 18,

- An assembly comprising a plurality of mask containers, each for holding one or more lithography masks (Col. 12, lines 4-12; Col. 49, lines 14-20; Col. 40, lines 54-60), wherein each one of the containers has an engaging apparatus adapted to engage with the corresponding engaging apparatus on another one of the containers, such that two or more containers can be stacked together in a fixed relationship to one another (Col. 29, lines 1-5 i.e., a number of containers can be easily piled up for transportation; Col. 13, lines 44-47; Col. 41, lines 35-37), and wherein each mask container has an electronic tracking device, the tracking device having a receiver unit for receiving lithography data, a memory for storing the lithography data, a processor unit for reading or writing the lithography data to or from the memory, and a transmitter unit for transmitting the lithography data read from the memory (Col. 28, lines 8-30).

Regarding claims 10 and 15,

- A manufacturing system for manufacturing semiconductor devices comprising: a plurality of mask containers (Col. 12, lines 4-12; Col. 49, lines 14-20; Col. 40, lines 54-60), each for holding one or more lithography masks, each one of the containers having a locking apparatus adapted to engage with the locking apparatus on another one of the containers, such that two or more containers can be carried together in a fixed relationship to one another (Col. 29, lines 1-5 i.e., a number of containers can be easily piled up for transportation; Col. 13, lines 44-47; Col. 41, lines 35-37); a plurality of lithography bays (Col. 12, lines 21-25; Col. 19, lines 34-35); a transport rail system for carrying the containers between different lithography bays (Fig. 1, element 401); wherein each lithography bay has a transmitter unit and a receiver unit for respectively transmitting and receiving lithography data (Fig. 1A, elements 604'A, 604A, 604B), and each mask container has an electronic tracking device having a receiver unit for receiving lithography data from a lithography bay, a memory for storing the lithography data, a processor unit for reading or writing the lithography data to or from the memory, and a transmitter unit for transmitting the lithography data read from the memory to the same lithography bay or another lithography bay (Col. 28, lines 8-10 and lines 14-30; Fig. 1, bar code readers 604'A – 604B);  
the transport rail system having a carrier and the mask containers each having an engaging apparatus for engaging with the carrier such that the mask

containers can be carried by the rail system (Col. 27, lines 60-67 – Col. 28 lines 3-7; Col. 41, lines 35-37).

Regarding claim 19,

- A method of operating a semiconductor device manufacturing system, the manufacturing system comprising a plurality of mask containers each containing a single mask (Col. 40, lines 58-60) and each container having a tracking device for transmitting and receiving data corresponding to the mask within the container (Col. 28, lines 12-30), the method comprising the following steps:  
receiving lithography data from a plurality of mask containers (Col. 28, lines 14-20), selecting two or more containers on the basis of the received lithography data (Col. 41, lines 35-37, i.e., Interface apparatus 200 may be adapted to operate with a pile of containers; Fig. 1A, elements 604A and 200);  
Operating a first automatic handling device so as to group together the selected containers in the form of a stack (Col. 29, lines 3-5 i.e., a number of containers can be easily piled up for transportation; Col. 41, lines 35-37; Col. 24, lines 37-39; Col. 13, lines 44-47) and to place the stack on a rail system connecting to a lithography bay having an exposure tool apparatus (Fig. 1A, element 401; Col. 18, lines 65-67, i.e., processing equipment);  
operating the rail system so as to transport the stack to the lithography bay (Fig. 1A elements 401; Col. 29, lines 3-5, i.e., a number of containers can be easily piled up for transportation);

further operating the exposure tool apparatus to receive lithography data from at least one of the mask containers in the stack (Fig. 1A elements 604A – 604B); Operating the lithography tool according to the data received from a mask container in the stack (Col. 28, lines 27-30); wherein operating the lithography tool comprises **at least one step out of the group of the following steps:**

- Removing a mask from a container (Col. 20, lines 23-26);
- Inserting a mask into a container;
- Removing a mask, returning the mask to a container and subsequently removing another mask from a different container
- Unstacking the containers in a stack
- Reassembling a stack
- Adding data to a mask in electronic form;
- Reading data from a mask;
- Exposing a semiconductor wafer or any other work-product by sending electromagnetic radiation through a mask;
- Storing a mask
- Manufacturing a mask;
- Maintaining a mask;
- Monitoring the transmission properties of a mask;
- Damaging a mask, disposing of a mask, recycling a mask, or any other action that removes a mask from the factory;

- Testing and measuring the properties of a mask, either directly, or indirectly;
- Assigning an identifier for a mask;
- Assigning an identifier for a plurality of masks; and
- Transferring information that relates to a mask from a first electronic device in a first container to a further electronic device in a further container.

As for claims 2-5, 8-9, 11-14, and 16-17, **Garric** further discloses,

- the engaging apparatus comprises a latch mounted on one face of the container, and a catch mounted on an opposite face of the container, such that two or more mask containers may be engaged by engaging the latch of one mask with the catch of another mask (Col. 29, lines 1-5; Fig. 7, elements 112B, 150B);
- each container has electrical contacts positioned such that contacts on two neighbouring containers in a stack form an electrical connection when the two containers are correctly positioned relative to each other (Col. 42, lines 35-41; Fig. 14B element 312);
- the receiver unit and the transmitter unit respectively receive and transmit radio frequency radiation (Col. 28, lines 20-24);
- the receiver unit and the transmitter unit respectively receive and transmit infrared radiation (Col. 28, lines 35-37);
- the tracking devices of the mask containers in a stack are adapted to communicate lithography data with each other (Col. 28, lines 8-20);

- the tracking devices in each container are programmed to identify the other containers in the stack and select between themselves one tracking device to transmit lithography data representative of all the containers in the stack (Col. 28, lines 8-30);
- a handling apparatus is provided for automatically loading or unloading mask containers onto or from the rail system (Col. 20, lines 23-26 and lines 34-37);
- there is provided a handling apparatus for bringing mask containers into stacked engagement with one another and for releasing a container from a stack or automatically removing a mask from a container (Col. 39, lines 48-50).
- there is provided a central computer with an input and output port for exchanging lithography data with the mask containers and the lithography bays (Fig. 1B, element 600; Col. 19, lines 1-12; Col. 28, lines 8-11 and lines 24-30);
- the rail system is provided with a traction apparatus for moving the mask containers and wherein the traction apparatus is controlled by the central computer (Col. 16, lines 20-25; Col. 17, lines 20-23; Col. 18, lines 65-68);
- said rail system carries the mask containers in a stack (Figs. 14A – 14B; Fig. 2A, rail-shaped elements 114A; Col. 24, lines 13-14);
- said rail system carries the mask containers in a frame with slots (fig. 14B).

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Garric** as applied to claim 1 above and further in view of **Maney et al. (US 5,166,884)**.

Regarding claims 6-7, **Garric** discloses the limitations of claim 1 above but fails to specifically disclose the type of memory used, as claimed in claims 6-7, EEPROM and SRAM. However, **Maney** discloses an intelligent system for processing and storing articles wherein a non-volatile memory is used to store the identity, status and history of the articles in the container (Abstract, lines 1-4, please note that EEPROM is a non-volatile memory). Furthermore **Maney** further discloses the use of SRAM (Col. 4, lines 62)). Therefore, it would have been obvious to a person of the ordinary skill in the art at the time the invention was made to combine the teachings of **Maney** with **Garric** because it would provide with an stable storage system and thereby improving the tracking of the containers between processing stations (**Maney**, Col. 4, lines 32-33; Abstract).

### **Conclusion**

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

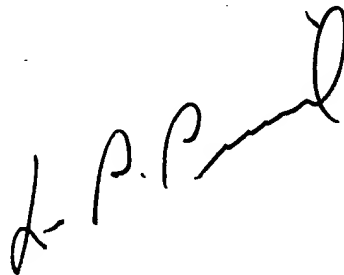
Any inquiry concerning communication or earlier communication from the examiner should be directed to Zoila Cabrera, whose telephone number is (703) 306-4768. The examiner can normally be reached on M-F from 8:00 a.m. to 5:30 p.m. EST (every other Friday).

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If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached on (703) 308-0538. Additionally, the fax phones for Art Unit 2125 are (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

Zoila Cabrera  
Patent Examiner  
1/23/04

A handwritten signature in black ink, appearing to read 'L. Picard', written diagonally across the page.

LEO PICARD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100